

**SENDER:** Complete items 1 and 2 when additional services are desired, and complete items 3 and 4.

Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☐ Show to whom delivered, date, and addressee's address. 2. ☐ Restricted Delivery  
↑(Extra charge)↑ ↑(Extra charge)↑ #0071M

3. Article Addressed to: MTS2008-0008 etc.  
 Raymond Reede  
 District Manager  
 Murphy Oil USA, Inc.  
 PO Box 657  
 Poplar, MT 59255

4. Article Number  
 P 803-766-656

Type of Service:  
☐ Registered ☐ Insured  
☒ Certified ☐ COD  
☐ Express Mail

Always obtain signature of addressee or agent and **DATE DELIVERED.**

5. Signature — Addressee  
 X

6. Signature — Agent  
 X *Sharon Brauman*

7. Date of Delivery  
*1-30-90*

8. Addressee's Address (ONLY if requested and fee paid)  
*1-25-H*

PS Form 3811, Mar. 1987 ★ U.S.G.P.O. 1987-178-268 DOMESTIC RETURN RECEIPT

P 803 766 656 74

**RECEIPT FOR CERTIFIED MAIL**  
 NO INSURANCE COVERAGE PROVIDED  
 NOT FOR INTERNATIONAL MAIL  
*1-25-90* (See Reverse) #0071M

Sent to <i>Raymond Reede</i>	
Street and No. <i>Murphy Oil USA</i>	
P.O., State and ZIP Code <i>PO Box 547</i> <i>Poplar, MT 59255</i>	
Postage	\$
Certified Fee	
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt showing to whom and Date Delivered	
Return Receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date <i>MTS 2008-0008</i> <i>etc.</i> <i>Monit. Inj. Fluids</i>	

PS Form 3800, June 1985

Fold at line over top of envelope to the right of the return address



JAN 25 1990

Ref: 8WM-DW

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Raymond Reede  
District Manager  
Murphy Oil USA, Inc.  
Post Office Box 547  
Poplar, Montana 59255

RE: UNDERGROUND INJECTION CONTROL (UIC)  
Monitoring of Injection Fluids  
Salt Water Disposal Wells  
Roosevelt County, Montana

Dear Mr. Reede:

In response to your recent requests to reduce the frequency of injection fluid analyses for the wells listed below, approval is hereby granted to submit fluid analyses annually, instead of on a quarterly basis. The only exception to this requirement is when there is a change in the source of injection fluids, in which case a water analysis is to be submitted to the Director within thirty (30) days.

<u>WELL</u>	<u>EPA PERMIT NO.</u>
Goings Government 1-D	MTS2008-0008
East Poplar Unit 80-D	MTS2026-0026
East Poplar Unit 8-D	MTS2023-0023
East Poplar Unit 1-D	MTS2022-0022
East Poplar Unit 5-D	MTS2021-0021
Lillian 1-D	MTS2035-0046

If you have any questions concerning this letter, you may contact John Carson at (303) 293-1435. Also, please direct all correspondence to the attention of John Carson at Mail Code 8WM-DW.

Sincerely,

Original Signed By  
ROGER FRENETTE

Max H. Dodson  
Director  
Water Management Division

cc: Jim Boyter  
Montana Office

FCD:January 4, 1990:jc/mr/mr-johnc/MonInjFl.Mur

8WM-DW  
Carson  
1/4/90

CEW  
1/17/90

8WM-DW  
1/18/90

8WM-DW  
Crotty  
1-19-90

CONCURRENCE COPY

FEB 9 1989

Ref: 8WM-DW

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Raymond Reede  
District Manager  
Murphy Oil USA, Inc.  
P. O. Box 547  
Poplar, MT 59255

Re: UNDERGROUND INJECTION CONTROL (UIC)  
EPA Permit #MTS2008-0008  
Murphy Goings Allotted No. 1-D  
SE SW Section 11-T29N-R50E  
Roosevelt County, Montana

Dear Mr. Reede:

Your December 27, 1988 request for reducing the frequency of injected fluid analyses submissions for the referenced salt water disposal well is denied. This decision is based on Murphy Oil's failure to provide this office with four (4) consecutive quarterly chemical analyses of injected fluids for the Goings Allotted No. 1-D.

We are currently in receipt of a chemical analysis dated November 29, 1988 for the Goings Allotted No. 1-D. We will accept this November 29, 1988 chemical analysis as the first of four (4) consecutive quarterly fluid analyses as required by EPA Permit #MTS2008-0008. You may re-apply for the reduction of frequency in October 1989.

If you have any questions relative to this decision, please contact Emmett Schmitz at (303) 293-1717.

Sincerely,



*for* Max H. Dodson  
Director  
Water Management Division

FCD:February 7, 1989:eschmitz:bk:roosevelt.No.1-D

CONCURRENCE COPY

*Final per E5  
1/31/89  
BK*

Ref: 8WM-DW

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Raymond Reede  
District Manager  
Murphy Oil USA, Inc.  
P. O. Box 547  
Poplar, MT 59255

Re: UNDERGROUND INJECTION CONTROL (UIC)  
EPA Permit #MTS2008-0008  
Murphy Going Allotted No. 1-D  
SESW Section 11-T29N-R50E  
Roosevelt County, Montana

Dear Mr. Reede:

Your December 27, 1988 request for reducing the frequency of injected fluid analyses (submissions) for the referenced salt water disposal well is denied. This decision is based on Murphy Oil's failure to provide this office with four (4) consecutive quarterly chemical analyses of injected fluids for the Goings Allotted No. 1-D.

We are currently in receipt of a chemical analysis dated November 29, 1988 for the Goings Allotted No. 1-D. We will accept this November 29, 1988 chemical analysis as the first of four (4) consecutive quarterly fluid analyses as required by EPA Permit #MTS2008-0008. You may re-apply for the reduction of frequency in October 1989.

If you have any questions relative to this decision, please contact Emmett Schmitz at (303) 293-1717.

Sincerely,

*R. Trumble for*

Max H. Dodson  
Director  
Water Management Division

FCD:January 31, 1989:schmitz:bk:roosevelt.No.1-D

*8WM-DW  
2/1/89  
8WM-DW  
2/1/89  
8WM-DW  
2/3/89*







UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION VIII

999 18th STREET - SUITE 500  
DENVER, COLORADO 80202-2405

FEB 9 1989  
Ref: 8WM-DW

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Raymond Reede  
District Manager  
Murphy Oil USA, Inc.  
P. O. Box 547  
Poplar, MT 59255

Re: UNDERGROUND INJECTION CONTROL (UIC)  
EPA Permit #MTS2008-0008  
Murphy Goings Allotted No. 1-D  
SE SW Section 11-T29N-R50E  
Roosevelt County, Montana

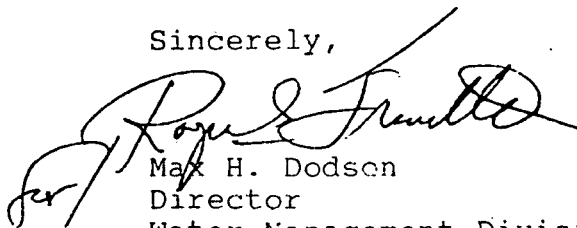
Dear Mr. Reede:

Your December 27, 1988 request for reducing the frequency of injected fluid analyses submissions for the referenced salt water disposal well is denied. This decision is based on Murphy Oil's failure to provide this office with four (4) consecutive quarterly chemical analyses of injected fluids for the Goings Allotted No. 1-D.

We are currently in receipt of a chemical analysis dated November 29, 1988 for the Goings Allotted No. 1-D. We will accept this November 29, 1988 chemical analysis as the first of four (4) consecutive quarterly fluid analyses as required by EPA Permit #MTS2008-0008. You may re-apply for the reduction of frequency in October 1989.

If you have any questions relative to this decision, please contact Emmett Schmitz at (303) 293-1717.

Sincerely,



Max H. Dodson  
Director  
Water Management Division





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION VIII  
999 18th STREET - SUITE 500  
DENVER, COLORADO 80202-2405

NOV 02 1988

Ref: 8WM-DW

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Raymond Reede  
District Manager  
Murphy Oil USA, Inc.  
P.O. Box 547  
Poplar, Montana 59255

RE: NOTICE OF NONCOMPLIANCE  
UIC Permit #MTS2008-0008  
Murphy Goings Allotted  
No. 1-D  
SESW Section 11-T29N-R50E  
Roosevelt County, MT

Dear Mr. Reede:

Please note the change in the UIC permit number for the captioned well from MTS21PW-0008 to MTS2008-0008. Please use this new number on all future correspondence.

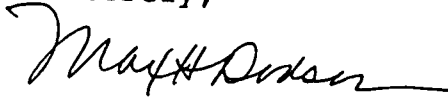
A review of the compliance file on the Goings Allotted No. 1-D indicates that the required 1987 annual chemical analysis of injected fluids has not been submitted to this office as required by February 15, 1988. This requirement is described on Page 6, Part I. Section D.9.(h) of your Final UIC Permit.

Page 5, Part I. Section D.9. of your UIC Permit and 40 CFR 144.32 require that all data pertaining to underground injection control, submitted to this office, be signed by a company employee so authorized by an officer of that company. Please request that an officer of Murphy Oil prepare a letter giving you authority to sign UIC reports and forms. This letter of authority may be written in such a manner as to be inclusive for all salt water disposal and secondary recovery wells Murphy operates in Montana.

Mr. Raymond Reede  
Murphy Oil USA, Inc.  
Page 2

If you have any questions concerning any of the above comments, please call Emmett Schmitz, of my staff, at (303) 293-1717. The requested data must be submitted within forty-five (45) days from receipt of this letter and sent to the attention of Mr. Schmitz.

Sincerely,

A handwritten signature in dark ink, appearing to read "Max H. Dodson", with a stylized flourish at the end.

Max H. Dodson  
Director  
Water Management Division



11-2-D

SENDER: Complete items 1 and 2 when additional services are desired and complete items 3 and 4. Put your address in the "RETURN TO" Space on the reverse side. Failure to do this will prevent this card from being returned to you. The return receipt fee will provide you the name of the person delivered to and the date of delivery. For additional fees the following services are available. Consult postmaster for fees and check box(es) for additional service(s) requested.

1. ☒ Show to whom delivered, date, and addressee's address. (Extra charge) 2. ☐ Restricted Delivery (Extra charge) 11-9-88

3. Article Addressed to:  Mr. Raymond Reede District Manager Murphy Oil USA, Inc. P.O. Box 547 Poplar, MT 59255	4. Article Number P 168 879 940 (630)  Type of Service: <input type="checkbox"/> Registered <input type="checkbox"/> Insured <input checked="" type="checkbox"/> Certified <input type="checkbox"/> COD <input type="checkbox"/> Express Mail <input type="checkbox"/> Return Receipt for Merchandise  Always obtain signature of addressee or agent and DATE DELIVERED.
5. Signature — Address X	8. Addressee's Address (ONLY if requested and fee paid)
6. Signature — Agent X <i>Sharon Bravard</i>	
7. Date of Delivery <i>11/7</i>	

PS Form 3811, Mar. 1988 \* U.S.G.P.O. 1988-212-865 DOMESTIC RETURN RECEIPT

P 168 879 940

RECEIPT FOR CERTIFIED MAIL

NO INSURANCE COVERAGE PROVIDED  
NOT FOR INTERNATIONAL MAIL

NOV 02 1988

(630) (See Reverse)

\* U.S.G.P.O. 1984-446-014

Sent to	<i>Mr. Raymond Reede</i>
Street and No.	<i>District Manager</i>
P.O., State and ZIP Code	<i>Murphy Oil USA, Inc</i>
Postage	<i>P.O. Box 547</i>
Certified Fee	<i>Poplar, MT 59255</i>
Special Delivery Fee	
Restricted Delivery Fee	
Return Receipt Showing to whom and Date Delivered	
Return receipt showing to whom, Date, and Address of Delivery	
TOTAL Postage and Fees	\$
Postmark or Date	<i>Notice &amp; Noncompliance</i>
	<i>MTS 2008-0008</i>
	<i>Murphy Gaining</i>
	<i>allotted NO. 01-D</i>

PS Form 3800, Feb. 1982



CONCURRENCE COPY

NOV 02 1988

Ref: 8WM-DW

CERTIFIED MAIL  
RETURN RECEIPT REQUESTED

Mr. Raymond Reede  
District Manager  
Murphy Oil USA, Inc.  
P.O. Box 547  
Poplar, Montana 59255

RE: NOTICE OF NONCOMPLIANCE  
UIC Permit #MTS2008-0008  
Murphy Goings Allotted  
No. 1-D  
SESW Section 11-T29N-R50E  
Roosevelt County, MT

Dear Mr. Reede:

Please note the change in the UIC permit number for the captioned well from MTS21PW-0008 to MTS2008-0008. Please use this new number on all future correspondence.

A review of the compliance file on the Goings Allotted No. 1-D indicates that the required 1987 annual chemical analysis of injected fluids has not been submitted to this office as required by February 15, 1988. This requirement is described on Page 6, Part I. Section D.9.(h) of your Final UIC Permit.

Page 5, Part I. Section D.9. of your UIC Permit and 40 CFR 144.32 require that all data pertaining to underground injection control, submitted to this office, be signed by a company employee so authorized by an officer of that company. Please request that an officer of Murphy Oil prepare a letter giving you authority to sign UIC reports and forms. This letter of authority may be written in such a manner as to be inclusive for all salt water disposal and secondary recovery wells Murphy operates in Montana.

8WM-DW  
JS  
10/28/88

Sam DW  
Pilo  
11/1

Sam DW  
Alet  
11/1/88



Mr. Raymond Reede  
Murphy Oil USA, Inc.  
Page 2

If you have any questions concerning any of the above comments, please call Emmett Schmitz, of my staff, at (303) 293-1717. The requested data must be submitted within forty-five (45) days from receipt of this letter and sent to the attention of Mr. Schmitz.

Sincerely,

**Original signed by**  
Max H. Dodson

Max H. Dodson  
Director  
Water Management Division

FCD:October 28, 1988:e.schmitz/8WM-DW/sak/goings.es

JUL 29 1985

Ref: SAM-DW

Rod Bruner  
Indian Health Service  
P.O. Box 868  
Poplar, Montana 59255

Dear Mr. Bruner:

With reference to our telephone conversation today, please send me the handwritten list of chemical tests for individual supply wells in scattered locations on the Fort Peck Indian Reservation. I understand that the information contained in this list is sketchy, but I would like it nonetheless. Our current information on water supply wells on the Reservation is almost non-existent.

The EPA is in need of a complete list of water supply wells for the Fort Peck Indian Reservation, but no such list seems to exist. If you find any other information that may be of help to us, please include it with your submittal, or contact me at (303) 293-1419.

As I mentioned, if the EPA finds it necessary to make an investigative trip to the Fort Peck Reservation, we may ask your permission to review the records on the 300 or 400 individual supply wells that are registered in your office. Proper credentials would be presented at the time.

Thank you for your prompt attention to this matter. I look forward to hearing from you soon.

Sincerely yours,

Laura Clemens,  
Physical Scientist  
Ground Water Section

cc: Bill Engle (MOO)  
Alfred Smith (8RC)

SUMDW51-069

## CONCURRENCES

SYMBOL							
SURNAME							
DATE							



JUL 5 1985

Ref: 8M0

MEMORANDUM

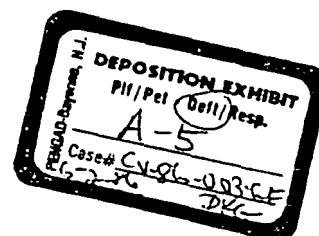
TO: Laura Clemmons, 8WM-DW  
Drinking Water Branch

FROM: *Bill*  
Bill Engle, 8M0  
Montana Office

SUBJECT: Telephone conversation with Matt Strever, Grace Petroleum Company

At your request, the following is my memory of a telephone conversation with Matt Strever of Grace Petroleum Company. Strever called me within one or two days of the deadline in which Grace was required to submit their requested applications. The conversation was one of questions by him on completing the application. At no time, as I recall, was the question of an extension of time for submittal of the application discussed. Neither he nor myself brought the subject up. The reason I remember this is that during the same period of time, Murphy Oil Company did call and request an extension of time and I told the person there to submit the request in writing, after verbally approving it. If Grace had requested an extension, I would have followed the same procedure.

Enclosures





AUG 06 1985

Ref: 844-DW

Mr. Jack Nance  
District Operations Manager  
Grace Petroleum Corporation  
146 Union Boulevard, Suite 760  
Lakewood, Colorado 80228

Lakewood, Colorado

Re: Buck Elk #2  
Salt Water Disposal Well

Re: Buck Elk #2  
Salt Water Disposal Well

Dear Mr. Nance:

As we discussed on August 5, there is some confusion as to the exact configuration of the surface facilities in the area of the Buck Elk #2 water disposal well located at CS-NE7 29N 51E in Roosevelt County, Montana. In light of what occurred last week in the Poplar Field, it is important that EPA obtain a more detailed representation of the surface facilities in the vicinity of the Buck Elk #2. As you are aware, EPA field inspectors experienced some difficulty in confirming the operating status of the well during their inspection of the Poplar Field. The inspectors were unaware of the coupling that diverted disposal water to the Goings Government #1 water disposal well in the Northwest Poplar field. The inspectors have also indicated that they thought that the coupling or "t-valve" was underwater. I enclose a copy of the surface schematic, submitted by Grace Petroleum as part of the permit application for the Buck Elk #2. The schematic is vague as to distances and dimensions. Please revise the schematic, providing more specifics and detailing any alterations that have been made at the site since the permit application was submitted last year. In addition, please indicate the exact route of piping through the facility. In doing so, be sure to show:

- 1) how disposal water is transported from producing facilities;
- 2) the path of the disposal water through the Buck Elk #2 facility to the Goings Government #1 well, indicating where the "t-valve" is located, and where the Buck Elk #2 well has been disconnected.

844-DW  
Clemens  
8/6/85

8RC  
Smith  
8/6/85

844-DW  
Crotty  
8/6/85

- 2 -

- 3) where pipeline or connections are underground or obscured from view;
- 4) the location of flow meters, and other measurement valves for the Buck Elk #2 well including the locations of the fittings where pressure gauges would be attached.

Thank you for your cooperation. If you have any questions, please call me at 293-1419.

Sincerely yours,

Laura Clemmens  
Physical Scientist  
Ground Water Section

cc: Alfred Smith  
Bill Engle

Clemmens:clemmens:8/5/85:1959Q



UIC PROGRAM  
INSPECTION REPORT

Name of Company: GRACE Date: 1-29-86 7:30 AM  
Name of Well: Goings Gov't Well No: MTS 21PW-0008  
Authorization No: \_\_\_\_\_  
Name of Field: EAST Poplar County: Roosevelt  
Location of Well: Sec 11 T 29N R 50E Type of Well: SWD \_\_\_\_\_ ER \_\_\_\_\_  
Type of Inspection: Routine \_\_\_\_\_ Compliance X P&A \_\_\_\_\_ Other \_\_\_\_\_  
Description of Photos Taken: None

Summary of Findings: Well was injecting at time of inspection

(1) Injection pressure was recorded on a Barton 7 day recording chart located on the south wall. Max reading in past 3 days has been 360 psi w/ Avg closer to 300 psi

(2) Has a Halliburton Totalizer Model MP-2. Total reading to date 339566. Totalizing meter is not connected @ time of inspection. Fitting w/ were from the meter is sitting on a 55 gallon drum off to the side. In order to be connected ~~that~~ fitting should be in line.

Jim Jones, contract pumpers, said meter went out yesterday & part is on order; should be here in about 1 1/2 wks

(3) Has a sampling tap

A review of the permit indicates max injection pressure allowed is 825 psi. Therefore, no noncompliance.

Company Rep. Notified: None Company Rep. Present: Jim Jones

Inspected by: W E Engle

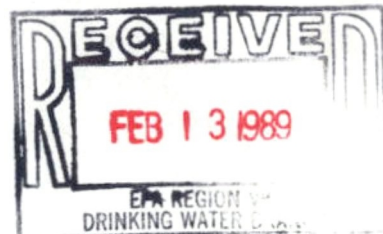


Operator Response to  
Correspondence

Well located: SESW 11 029N 050E  
FORT PECK  
POPLAR, NW, ROOSEVELT Co.  
GOINGS GOVT  
MT000008  
2D  
MT20008-00008



POST OFFICE BOX 547  
POPLAR, MONTANA 59255



February 10, 1989

*EIS*

United States Environmental Protection Agency  
Region VIII  
999 18th Street - Suite 500  
Denver, Colorado 80202-2405

Attn: Emmett Schmitz

Dear Mr. Schmitz:

We are in receipt of the letter denying a reduction of the frequency of injected fluid analyses submitted. We will send you quarterly fluid analyses on all our salt water disposal wells. We will re-apply for a reduction of the frequency in the fourth quarter of 1989. Thank you for your consideration in this matter.

*Original letter to EPA  
11/15/88-2007*

Sincerely,

*Raymond Reede*  
Raymond Reede  
District Manager

RR/jh

*Goings 11/10/88 L-O to file*





JUL 29 1985

Ref: 8WM-DW

Rod Bruner  
 Indian Health Service  
 P.O. Box 868  
 Poplar, Montana 59255

Dear Mr. Bruner:

With reference to our telephone conversation today, please send me the handwritten list of chemical tests for individual supply wells in scattered locations on the Fort Peck Indian Reservation. I understand that the information contained in this list is sketchy, but I would like it nonetheless. Our current information on water supply wells on the Reservation is almost non-existent.

The EPA is in need of a complete list of water supply wells for the Fort Peck Indian Reservation, but no such list seems to exist. If you find any other information that may be of help to us, please include it with your submittal, or contact me at (303) 293-1419.

As I mentioned, if the EPA finds it necessary to make an investigative trip to the Fort Peck Reservation, we may ask your permission to review the records on the 300 or 400 individual supply wells that are registered in your office. Proper credentials would be presented at the time.

Thank you for your prompt attention to this matter. I look forward to hearing from you soon.

Sincerely yours,

Laura Clemmens,  
 Physical Scientist  
 Ground Water Section

cc: Bill Engle (MOO)  
 Alfred Smith (8RC)

8WM-DW51-069

## CONCURRENCES

SYMBOL							
SURNAME							
DATE							





JUL 5 1985

Ref: 8MO

MEMORANDUM

TO: Laura Clemmons, 8WM-DW  
Drinking Water Branch

FROM: *Bill*  
Bill Engle, 8MO  
Montana Office

SUBJECT: Telephone conversation with Matt Strever, Grace Petroleum Company

At your request, the following is my memory of a telephone conversation with Matt Strever of Grace Petroleum Company. Strever called me within one or two days of the deadline in which Grace was required to submit their requested applications. The conversation was one of questions by him on completing the application. At no time, as I recall, was the question of an extension of time for submittal of the application discussed. Neither he nor myself brought the subject up. The reason I remember this is that during the same period of time, Murphy Oil Company did call and request an extension of time and I told the person there to submit the request in writing, after verbally approving it. If Grace had requested an extension, I would have followed the same procedure.

Enclosures





MAY 31 1985

REF: 8WM-DW

Dane Anderson  
Grace Petroleum Corporation  
143 Union Boulevard, Suite 760  
Lakewood, Colorado 80228

RE: Goings Government # 1  
Authorization to Inject  
Permit # MTS21PW-0008

Dear Mr. Anderson:

On May 23, 1985, Grace Petroleum Corporation was given verbal approval to recommence injection through the Goings Government # 1 salt water disposal well. The intent of this letter is to announce that the Goings Government # 1 has been found to be in compliance with all the conditions of UIC Permit #MTS21PW-0008, and that this well is now authorized to inject fluids as specified in the permit.

Permit condition 13(b) required Grace Petroleum to either 1) repair the Goings Government # 1, and render it fit to pass a mechanical integrity test (MIT); or 2) plug and abandon the well, within sixty (60) days of the effective date of the permit.

Grace Petroleum worked over the well by cementing a 2 7/8" string of tubing into the 4 1/2" long string casing from just above the perforated interval to the surface. A report of the workover has been submitted to EPA, and it has been determined that the well meets the construction requirements of 40 CFR Part 146.22.

A successful MIT was performed in accordance with 40 CFR Part 146.8 on May 21, 1985. Two representatives from the Bureau of Reclamation witnessed the test, and a pressure recording device was used on-site to document the pressure test. EPA is in receipt of the documentation of the pressure test, and finds the results to be satisfactory.

Grace Petroleum is authorized to continue injection through the Goings Government #1 well for the life of the well, so long as compliance with all permit conditions is maintained.

Feel free to call Laura Clemmens at 293-1419, if you have any questions.

Sincerely yours,

Jack W. Northrup, P.E.  
Deputy Director

CONCURRENCES

SYMBOL	8WM-DW	8WM-DW	8WM-DW	8RC	Max H. Dodson, Director		
SURNAME	Clemmens	Ehler	Thompson	Reid	Water Management Division		
DATE	5/23/85	5/23/85	5/24/85	5/20/85			





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION VIII  
1860 LINCOLN STREET  
DENVER, COLORADO 80295

FEB 25 1985

REF: 8WM-DW

Mr. James Johnson  
Grace Petroleum Corporation  
143 Union Boulevard, Suite 760  
Lakewood, Colorado 80228

RE: Demonstrating Financial Responsibility  
for plugging and abandoning the Goings  
Government #1, the EPU 110-XD, and the  
Buck Elk #2

Dear Mr. Johnson:

EPA has reviewed the financial statement submitted by your office and has determined that the information in the financial statement does not provide adequate assurance that Grace will properly plug and abandon the wells referenced above. Although the 1983 financial statement reflects that Grace Petroleum is currently a financially sound company, there are other qualifications to be met before EPA can accept the risk of using a financial statement as the only guarantee that Grace Petroleum will properly plug and abandon the wells:

1.) Past performance in plugging and abandoning wells: EPA has no record of Grace Petroleum's past performance in plugging wells.

2.) Broad base of financial data: EPA has received only 1983 data upon which to base its decision. Such a report reflects only a snapshot of a corporation's true financial standing.

In addition, EPA has received conflicting reports as to the operational status of the three wells and has experienced considerable difficulty in determining whether or not the above mentioned wells have integrity. Because of this, EPA has had difficulty permitting the wells.

For these reasons, EPA cannot accept Grace Petroleum's financial statement this year for the three wells. Grace Petroleum must instead submit a more secure financial instrument. Grace Petroleum must either establish a trust fund or obtain a blanket surety bond or letter of credit in the amount of \$60,000 as described in the enclosed guidance. EPA has determined the amount of financial assurance by calculating what the actual cost to EPA would be to plug and abandon the three wells, should they be abandoned.



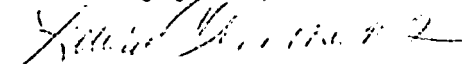
- Page 2 -

Please review the enclosed guidance document on financial responsibility, as well as the samples of a bond and standby trust agreement. Please note that if a letter of credit or surety bond is used as the financial mechanism, a standby trust must be set up in conjunction with the mechanism. Aetna Casualty and Surety Company, Denver, Colorado has experience in establishing surety bonds with standby trust agreements for the UIC program.

If Grace Petroleum would like to use the financial statement as a means of financial assurance for other injection wells in future years, please submit financial statements for 1984 and 1985. With this additional financial data, EPA can make a more informed decision as to the financial standing of the company. After Grace Petroleum has maintained the surety bond, letter of credit, or trust agreement for one year, EPA will, if requested, reevaluate Grace Petroleum's financial standing and may, as a result, allow the use of a financial statement for subsequent years.

EPA will be unable to proceed with processing the final permits for these wells until adequate financial assurance has been received. Therefore, you must either obtain a surety bond, letter of credit, or establish a trust agreement for the full amount necessary for EPA to plug and abandon the three wells (\$60,000), within ten days of the date of this letter. If you have any questions, please contact me immediately at 293-1419.

Sincerely yours,

  
Laura J. Clemmens

Enclosures: Sample Standby Trust Agreement, Sample Surety Bond

cc: D.L. Sterne  
G.C. Victory  
E.W. Tebow

January 30, 1985

⑤  
Goings  
file

MEMORANDUM

FROM: Laura Clemmens

TO: File

SUBJECT: Minutes of meeting with Dane Anderson representing Grace Petroleum - concerning workover of Goings Government #1. Deb Ehlert also attended.

Dane Anderson is a geologist/engineer working under contract with Grace Petroleum. Mr. Anderson came in with a proposal to work over the Goings Government Well #1 to make it fit for temporary injection of brines produced in the Poplar Field until a permit for a new SWD well in the field could be granted.

Background:

Grace Petroleum, upon failing to submit UIC permit applications before the deadline set by EPA, lost their authorization to inject through the Goings Government #1, the Buck Elk #2, and the EPU 110-XD (all in the Poplar Field) on July 31, 1984. Grace Petroleum shut-in the three wells on September 28, 1984.

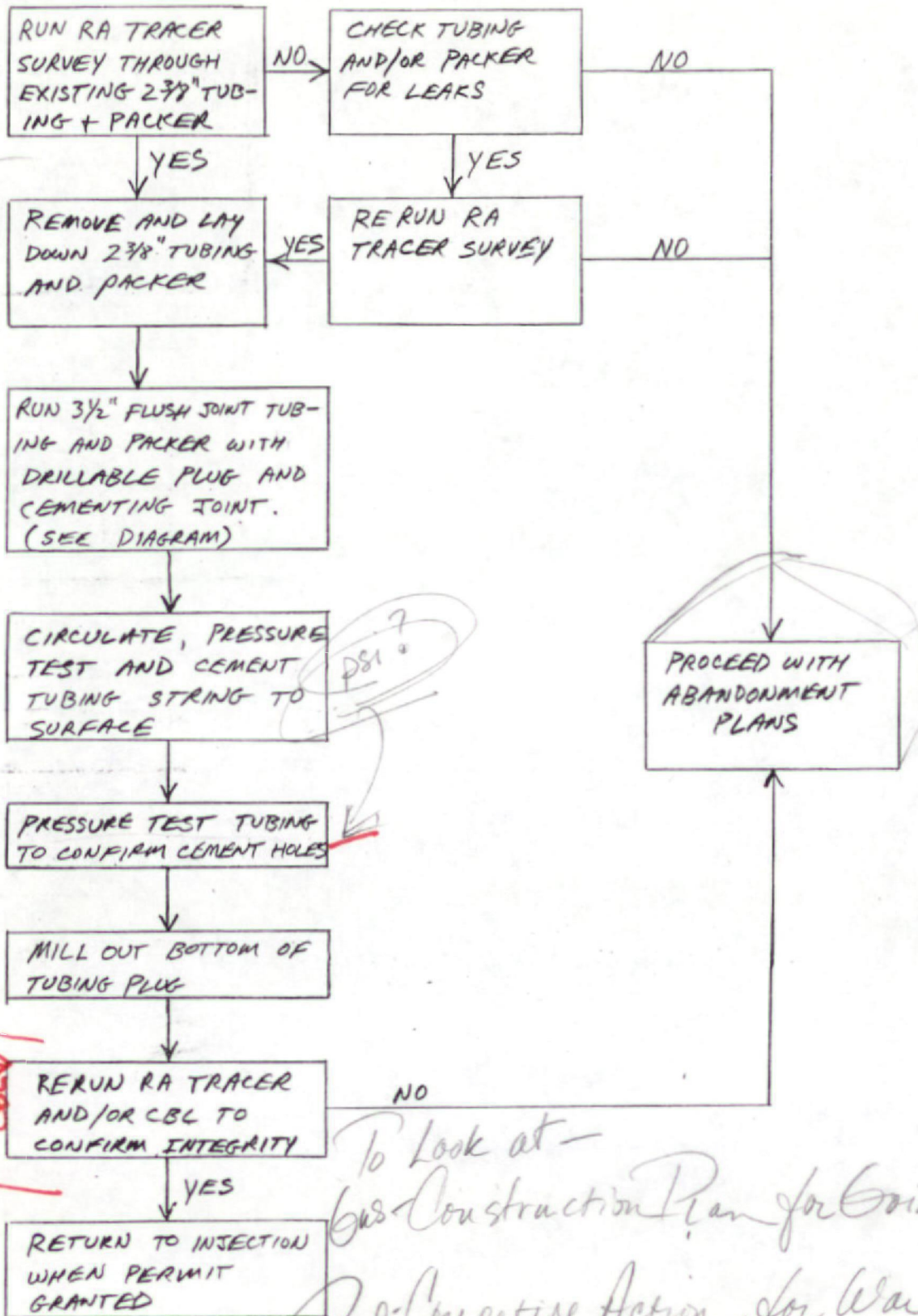
Since September 28, 1984, when Grace Petroleum shut-in the three salt water disposal wells in the Poplar Field in response to an EPA warning, Grace has been losing money from the field. Anderson stated that this is because it is very costly to produce oil in the field without having an inexpensive disposal facility for the brines produced in conjunction with the oil.

Dane Anderson stated that Grace has shut-in all the producing wells in the field which produce a large volume of salt water. Therefore, only those high oil volume producing wells are being operated in the field. Anderson estimated that, at the going market rate of \$25.00 per barrel, at a rate of 75-100 barrels of oil per day, Grace Petroleum is losing between \$80,000 and \$100,000 per month. The cost of disposing of a barrel of salt water produced with oil is \$1.50 per barrel, \$1.00 to haul the water, and \$.50 to dispose of the water at the well head. Anderson stated that although Grace has cut way back on oil production in the Poplar Field, they are still producing between 500-600 barrels of salt water per day.

Mr. Anderson proposed to convert the Goings Government well in the following manner:

After running a series of tests (e.g., injectivity profiles, etc.) on the well, Grace will place new tubing and packer (using the same injection zone - the Dakota Formation) down to the original injection perforations and circulate cement to the surface. By doing this, the well bore would be filled with cement except for the injection tubing. After confirming the integrity of the cement bond, and running an injection profile in the well, Grace proposed to permit the well and inject salt water immediately afterward (see proposed workover schematic and flow chart, attached).

After consulting with Paul Osborne, Gus Stolz, and Pat Crotty, I decided to allow the pre-conversion testing to commence, but not authorizing any construction or injection until the permit had been issued.

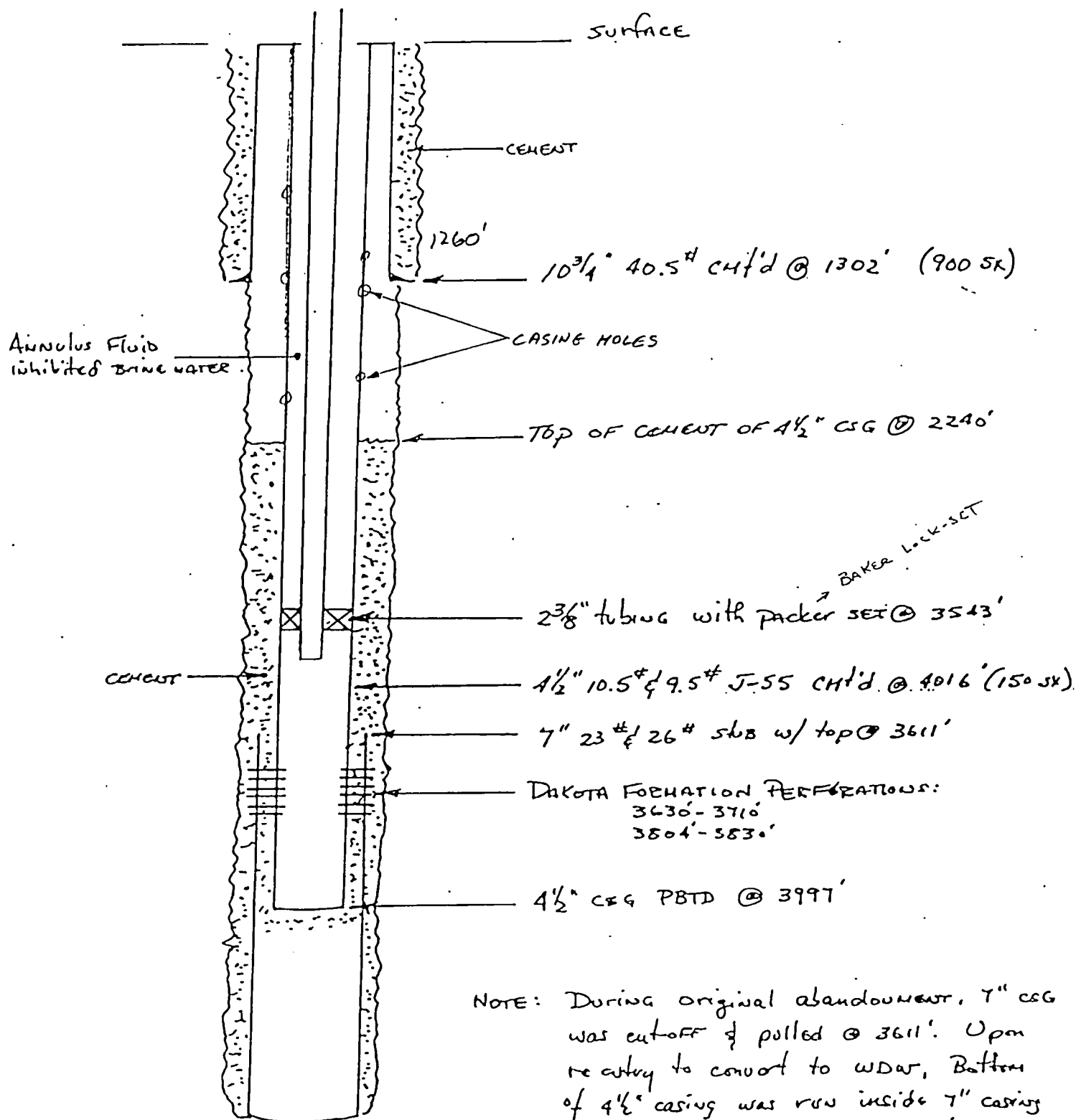
PROPOSED PROGRAM



# EXISTING CONDITIONS

GOINGS GOVERNMENT WDW #1  
NW Poplar Field

## DOWNHOLE SCHEMATIC



NOTE: During original abandonment, 7" CSG was cut-off & pulled @ 3611'. Upon reentry to convert to WDW, Bottom of 4 1/2" casing was run inside 7" casing SUB. The 4 1/2" CSG was cemented from 3997' to 2240'.

# PROPOSED CONDITIONS

Area of Review

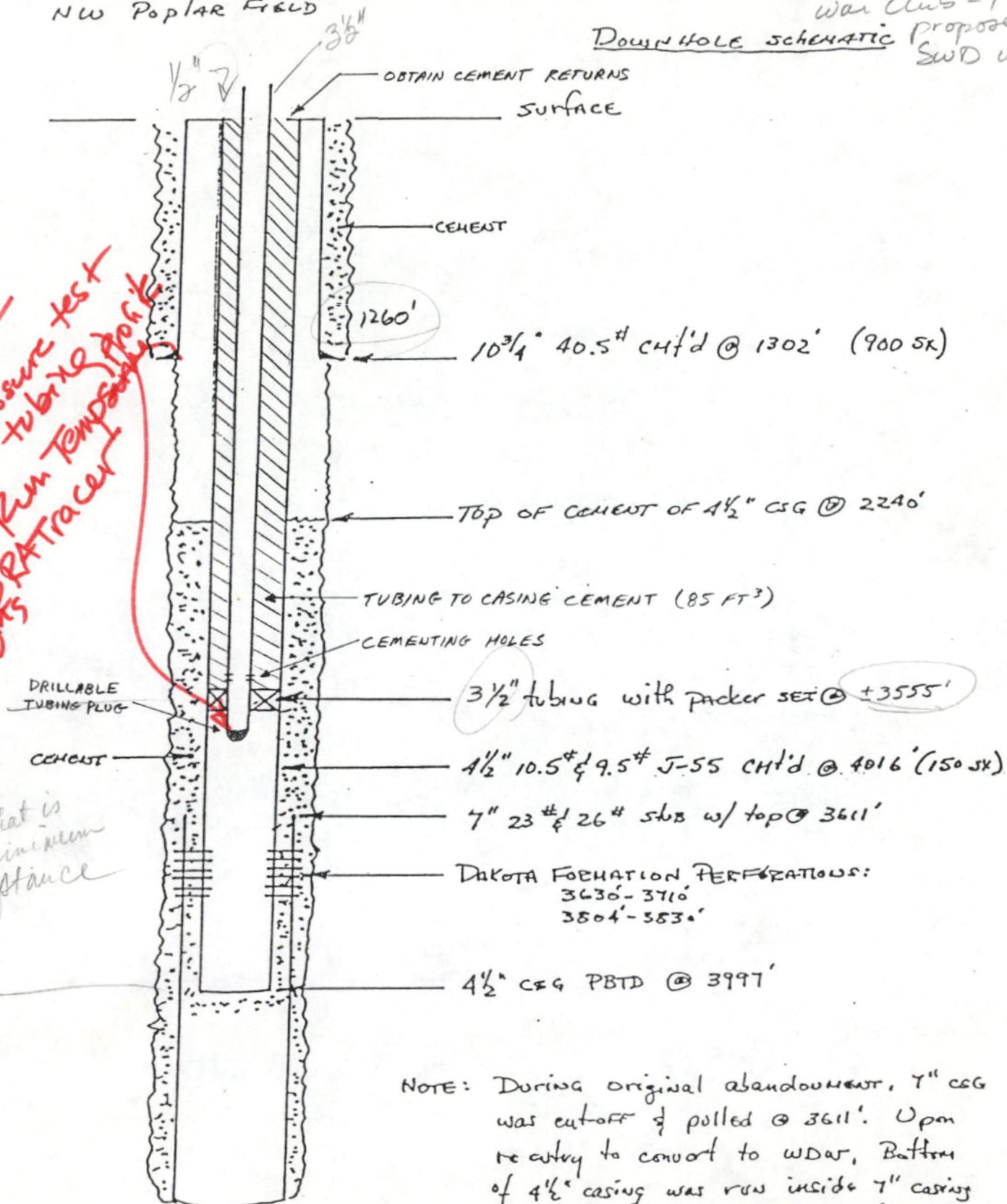
325 S.C.  
War Club 1K

380 S.C.  
War Club #1

GOINGS GOVERNMENT WDW #1  
NW Poplar Field

DOWNHOLE SCHEMATIC proposed  
SWD well

Plan  
# Pressure test  
tubing from  
Run Temp  
RA Tracer



NOTE: During original abandonment, 7" CSG was cut-off & pulled @ 3611'. Upon recovery to convert to WDW, Bottom of 4 1/2" casing was run inside 7" casing sub. The 4 1/2" CSG was cemented from 3997' to 2240'.



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE: DEC 14 1984

SUBJECT: Possible Ground Water Investigations at the Site of the  
Grace Petroleum Company Injection Wells in the Poplar FieldFROM: Paul S. Osborne, Regional Ground Water Expert *Paul*TO: Laura Clemmens, Environmental Physical Scientist  
Derrick Hobson, Regional Counsel

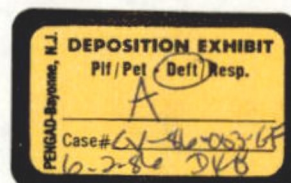
Per your December 12, 1984 request I have prepared the following discussion concerning the types of studies that should be conducted in the vicinity of the three Grace injection wells in the East Polar Field (Goings Government, Buck Elk 2 and the EPU 110-XD). These would be used to assess any impact they may have had on local underground sources of drinking water. As I understand the situation, the Grace Wells have been tested for mechanical integrity and failed. Their casings are apparently full of holes, and the company has decided to plug and abandon the wells. There is concern that injected water may have contaminated the Judith River formation. The situation is complicated by the fact that the Buck Elk 2 injection well in the field has been injecting 200,000 TDS water into the Judith River sporadically for over ten years.

In response to Derrick's questions about how Grace could evaluate the extent of contamination in the Judith River, I have the following comments:

1) Any evaluation should start with the collection of the following existing data:

- a. All existing analyses of water which was injected into the Grace wells in question.
- b. Sufficient data on injection volumes to allow an accurate estimate of the average injection volume and the total injected volume for each one of the Grace Wells and the well injecting into the Judith River.
- c. All analyses of water quality for the Buck Elk 2 well (injecting directly into the Judith River).
- d. The completion reports and full scale copies of all available logs.
- e. Analyses from other wells into the Judith River to estimate background water quality.

2) Using the data on volume and the data on the thickness and porosity of the injection zone, an estimate of the radius of influence of each well should be calculated. The estimated calculation should assume that





all injected water was going into the target reservoir and that the injected water moves radically away from the well. The radius of influence (using Darcy's law) can be calculated with the following formula:

$$r = \left[ \frac{W_i (5.615)}{\pi \phi h} \right]^{1/2}$$

Where:

$W_i$  = Volume of fluid discharged (barrels)

$\phi$  = Porosity of Reservoir

$h$  = Thickness of injection zone

$\pi$  = 3.14

The estimate of the radius of influence will be important in showing the relative magnitude of the influence of the various injection. It is especially important in the case of the Buck Elk 2. It is possible that the radius of influence of this well is large enough to mask out the influence of any leaks in the Grace wells.

3) If the radius of influence does not include the Grace wells, it would be possible to perform further studies to define the impact of the leaks and the impacts of the Judith River well itself. The main methods of interest are the following:

- a. Install monitoring wells.
- b. Make several transects and depth soundings using a powerful resistivity unit.
- c. Run various logs on the existing wells to determine the location and size of the casing leaks. This would be followed by an effort to obtain a sample from those spots which are leaking into the Judith River.

4) The use of monitoring wells to define the problem will be expensive as several monitoring wells (1,100 ft. deep) may be needed at each well site. Prior to placement of any wells, the static shut in pressure of the Judith River formation should be estimated at each well site if possible. This will enable the direction of flow in the Judith River to be estimated so that wells can be placed to insure that they would intercept any plume. The efficiency of well placement would be improved if information on the potential size of the leaks was known. This would enable estimates of the radius of influence in the Judith River to be calculated so that wells were not drilled outside of the radius of influence.

5) The use of the resistivity method might (depending on site conditions) give the most accurate picture of water quality changes within the Judith River. Several factors will effect the results.

a. The depth of the injection zone is a major factor. The ability of a resistivity unit to measure characteristics at depths greater than 1,000 ft. depends on the amount of current that can be input through the power electrode and the size of the electrode spacings. The USGS has used resistivity to define geologic and hydrologic conditions at depths greater than 5,000 feet using high voltage units.

b. The natural conductivity of the units which overlie the zone of interest may be such that conditions in deeper units will be masked. The salinity of the water in these units will be a major factor in the units conductivity.

c. There must be a significant difference between the conductivity of the native water and the conductivity of the injected water.

d. The area must be reasonably free of buried pipelines, fences, power lines, etc. to minimize interference.

e. Prior to making a decision on this method a description of geologic and hydrologic conditions at the site should be compiled. The completion reports can be used to construct several cross sections of the area. This data should be discussed with the USGS's resistivity expert, Mr. Zody. He would be able to provide good opinions on the viability of this method.

6) Some information can be obtained by testing and sampling the shut in wells. This information will provide some details on the contamination of the Judith River in the immediate vicinity of the well. The following steps could be undertaken.

a. If the shut in well still has its original equipment, a radioactive tracer (RAT) survey could be run. This would require that water be injected into the well during the test. The test will be able to pinpoint if fluid is moving by the packer into the annulus and hence through a leak in the casing. It can also pinpoint vertical movement outside of the casing. It may be possible to pinpoint the volume of leakage using this test. This test should be run in conjunction with a temperature survey as an aid to interpretation.

b. If the well has had tubing and packer pulled, it will not be possible to determine if water was bypassing the packer. A RAT Survey and a spinner survey should be used to pinpoint the locations of casing leaks and the amount of leakage.

c. Once leak locations and the potential leakage rates have been estimated, estimates of the area of influence of the leak should be made on it will be necessary to assume various time frames over which leakage may have occurred.

d. It may be useful to obtain samples of the formation. This will only result in a point estimate of the water quality impact of the leak. It will be necessary to use a drill stem tester which has had packers to isolate the zone of interest.